

GENERIC NAME: AMYL NITRITE, SODIUM THIOSO₄, SODIUM NITRITE

BRAND NAME: Cyanide Antidote Kit

Indications

Symptomatic cyanide toxicity. Amyl and sodium nitrite may sometimes be given for hydrogen sulfide toxicity.

Mechanism

Amyl and sodium nitrite are given to produce low grade methemoglobinemia. Cyanide leaves tissues and moves into blood to bind to methemoglobin.

Sodium thiosulfate enhances metabolism of cyanide to thiocyanate which is relatively nontoxic and is excreted in the urine.

Supplied

1 box of amyl nitrate pearls (ampoules).

Two 10 ml vials of 3 % sodium nitrite (30 mg/ml; 300 mg/vial).

Two 50 ml vials of 25 % sodium thiosulfate (250 mg/ml; 12.5 g/vial).

Dose

Amyl nitrite: Break amyl nitrite pearl and hold over face of breathing patient or over air intake of ambu bag for 30 seconds or every minute while IV is being established. Amyl nitrite does not need to be used if IV is in place since IV sodium nitrite is much more effective.

Sodium nitrite (3 %) dose:

Adult: 10 ml (300 mg; 1 amp) IV over 5 - 10 min. Can be given faster during a code.

Child: 0.33 ml/kg of 3 % solution IV over 5 - 10 min.

Doses can be repeated if no response in 15 to 30 minutes.

Sodium thiosulfate (25%) dose:

Adult: 50 ml (12.5 g) IV over 5 minutes. Can be given faster during a code.

Child: 1.65 ml/kg of 25 % solution IV over 5 minutes

Occasionally may be asked to repeat dose. Don't give for sulfide poisoning.

Adverse Effects

Nitrite induced hypotension from vasodilation. Usually not serious - in fact BP may rise as cyanide toxicity disappears.

If overdose of sodium nitrite given, then dangerous methemoglobinemia may result.

Contraindications

Don't give nitrites if dangerous methemoglobinemia already present (incredibly unlikely).

Documentation and Outcome

Document lack of contraindications.

Document indication for therapy (e.g., coma following cyanide exposure).

Document dose, route of administration, time of administration, duration of administration of each component of the kit.

Document patient response or lack thereof: LOC, vital signs (especially BP), presence or absence of cyanosis.